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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,516	09/11/2006	Daniel M. Giaquinta	HNDA 2023.2	1180
45735 7590 03/16/2009 SENNIGER POWERS LLP (SMX) 100 NORTH BROADWAY 17TH FLOOR ST. LOUIS, MO 63102				
EXAMINER POLYANSKY, ALEXANDER				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspatents@senniger.com

Office Action Summary

Application No.

10/568,516

Applicant(s)

GIAQUINTA ET AL.

Examiner

ALEXANDER POLYANSKY

Art Unit

4181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 72-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 72-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-9 and 72-78 are pending where claims 1, 5, 6, 74 and 75 have been amended; claims 10-21, 22-30, 31-71 have been cancelled.

Status of Previous Rejections

The 35 U.S.C. 102(b) rejection of claims 1-9 and 72-78 as being anticipated by Itoh et al., US 4970128 has been withdrawn in view of the amendments to the claims.

Drawings

The drawings were received on January 28, 2009. These drawings are replacement Figures 2 and 3 and the Examiner has approved entry of the replacement figures.

Examination on the Merits

Claims 1-9 and 72-78 are pending and presented for examination on merit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 72-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al., US 5024905.

Regarding claim 1, Itoh teaches the composition of the alloy particles having a size of 25 to 50 angstroms comprising Pt and Cu and with an atomic mass% of 50 for Pt (column 9, lines 54-55). Prima facie obviousness exists, because both the size and the atomic % disclosed by Itoh overlap the size and atomic% ranges recited in the instant claims. See MPEP 2144.05.

Regarding claims 2-4, 7, 8, 72, 73, 76, and 77, Itoh does not expressly teach the concentrations of platinum and copper is greater than about 95 atomic percent to include the 25 angstrom limitation. However, Itoh does teach that if the proportion of at least one of the iron, cobalt and copper elements is less than 9 atomic %, or the proportion of platinum exceeds 70 atomic %, the effect of adding iron, cobalt and copper on the activity of the catalyst does not appear markedly, and the resulting catalyst only shows activity equivalent to that of a catalyst comprising platinum alone, that of platinum-iron, platinum-cobalt and platinum-copper binary alloy catalyst, or that of a platinum-iron-cobalt or platinum-iron-copper ternary alloy catalyst (column 4, lines 57-68). In view of this disclosure, the concentration range of the Pt/Cu catalyst is a result-effective variable and it would be obvious to one of ordinary skill in the art to pick a concentration of Pt to be less than 70% and copper greater than 9% and when added to be greater than 95%, as is instantly claimed. See MPEP 2144.05(II). Additionally, Itoh teaches the electrocatalyst as comprising 40 to 70 atomic % of platinum and 9 to 27 atomic % of copper (abstract).

Regarding claims 5-6 and 74-75, Itoh does not disclose the instantly claimed average particle size of less than about 20 angstroms and less than 15 angstroms. However, Itoh does teach that heat-treatment at an excessively high temperature for a long period of time should be avoided because it grows the crystallite size of the alloy and decreases the surface area of the resulting catalyst. The optimum temperature and time for the alloying treatment depend upon the particle sizes and the degree of dispersion of the metals or their compounds deposited on the catalyst precursor before reduction and alloying. When the particle diameter is small and the components are highly dispersed, sufficient alloying proceeds at lower temperatures within a

shorter period of time to give an alloy having a small crystallite diameter in the highly dispersed state (column 6, lines 54-66). Itoh further teaches that it is preferred that the particle size is less than 30 angstroms (column 7, lines 8-9). In view of this, it is the examiner's position that the particle size is a result-effective variable, and is thus prima facie obvious to control the size of the particle based on the temperature and time applied during treatment. See MPEP 2144.05(II).

Additionally, since Itoh teaches the particle size of 25 angstroms (disclosed in the rejection of claim 1 above), it is the examiner's position that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05(I).

Regarding claims 9 and 78, Itoh teaches a platinum alloy electrocatalyst (abstract) that is deposited on an electrically conductive carrier (column 5, lines 14-16).

Further regarding claims 1-8 and 72-77, it is the examiner's position that the claimed compositions are unpatentable based on the prior art and based on MPEP 2144.05(II) which recites: "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages." Thus, the examiner has established a prima facie case of obviousness.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re*

Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 72-77 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 5, 11, 12, 14, 18, 20, 23, and 27 of copending Application No. 11205557. Although the conflicting claims are not identical, they are not patentably distinct from each other. Even though the instantly claimed limitations do not include nickel, the preamble language of the instantly claimed invention and 11205557 both state "comprising", thus satisfying that nickel is not a limiting factor.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-9, 72-78 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 7, 9, 11, and 19 of copending Application No. 11341139. Although the conflicting claims are not identical, they are not patentably distinct from each other. Even though the instantly claimed limitations do not include titanium, or an oxide, carbide or salt, the preamble language of the instantly claimed invention and 11341139 both state "comprising", thus satisfying that titanium or an oxide, carbide or salt are not limiting factors.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed January 28, 2009 have been fully considered, and based on analysis of the amended claims, it is the examiner's position that the applicant's arguments are not persuasive.

The applicants argue that Itoh does not teach the claimed average particle size of less than 25 angstroms. See Itoh's teaching of claim 1, wherein the composition of the alloy particles having a size of 25 to 50 angstroms comprising Pt and Cu and with an atomic mass% of 50 for Pt (column 9, lines 54-55) is delineated. Itoh further teaches that it is preferred that the particle size is less than 30 angstroms (column 7, lines 8-9).

Further as set forth above in the statement of the rejection, Itoh does teach that heat-treatment at an excessively high temperature for a long period of time should be avoided because it grows the crystallite size of the alloy and decreases the surface area of the resulting catalyst. The optimum temperature and time for the alloying treatment depend upon the particle sizes and the degree of dispersion of the metals or their compounds deposited on the catalyst precursor before reduction and alloying. When the particle diameter is small and the components are highly dispersed, sufficient alloying proceeds at lower temperatures within a shorter period of time to give an alloy having a small crystallite diameter in the highly dispersed state (column 6, lines 54-66). In view of this, it is the examiner's position that the particle size is a result-effective variable, and is thus prima facie obvious to control the size of the particle based on the temperature and time applied during treatment. See MPEP 2144.05(II).

The applicant's argument that the claimed composition has been prepared by a different or specific process is not persuasive. The claims are drawn to a composition and not to a process of making.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER POLYANSKY whose telephone number is (571)270-5904. The examiner can normally be reached on Monday-Friday, 8:00 a.m. EST - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALEXANDER POLYANSKY/
Examiner, Art Unit 1793

/John P. Sheehan/
Primary Examiner, Art Unit 1793